

CLAIMS

WE CLAIM:

5 *sub 7* 1. A polymer-platelet particle composite comprising at least one polyamide, at least one oxygen scavenging system, and platelet particles derived from at least one layered silicate material.

2. The composition of claim 1 wherein said polyamide resin is selected from the group consisting of partially aromatic polyamides.

10 3. The composition of claim 1 wherein said polyamide resin is selected from the group consisting of poly(m-xylylene adipamide), poly(hexamethylene isophthalamide-co-terephthalamide), poly(m-xylylene adipamide-co-isophthalamide), and mixtures thereof.

15 4. The composition of claim 1 wherein said polyamide resin comprises poly(m-xylylene adipamide).

5. The composition of claim 1 wherein said platelet particles are present in an amount up to about 30 weight percent.

6. The composition of claim 1 wherein said platelet particles are present in an amount up to about 20 weight percent.

20 7. The composition of claim 1 wherein said platelet particles are present in an amount between about 0.01 weight percent and about 20 weight percent.

8. The composition of claim 1 wherein said platelet particles are present in an amount between about 0.5 weight percent and about 20 weight percent.

25 9. The composition of claim 1 wherein said layered silicate material comprises sodium bentonite, sodium montmorillonite or mixtures thereof.

10. The composition of claim 1 wherein said oxygen scavenging system comprises an oxygen scavenging catalyst which comprises at least one transition metal compound.

sub 7
30 11. The composition of claim 10 wherein said oxygen scavenging catalyst is selected from the group consisting of the first, second, and third transition series.

12. The composition of claim 10 wherein said oxygen scavenging catalyst which comprises at least one cobalt compound.

13. The composition of claim 11 wherein said cobalt compound is selected from the group consisting of organic acids, acetates, halides, and mixtures thereof.

14. The composition of claim 1 wherein said oxygen scavenging system is selected from the group consisting of ethylenically unsaturated hydrocarbons and a transition metal catalyst; ascorbate; isoascorbate; sulfite; ascorbate with an oxygen scavenging catalyst; transition metal complex or chelate of a polycarboxylic acid; transition metal complex or chelate of polyamine; transition metal complex or chelate of salicylic acid; a reduced form of a photoreducible dye compound; carbonyl compound with an absorbance in the ultraviolet spectrum; tannin; polyethers with a transition metal catalyst; polyamides with a transition metal catalyst; organic compounds having a tertiary hydrogen, benzylic hydrogen or allylic hydrogen in combination with a transition metal catalyst; an oxidizable metal in combination with a salt; or a metal in a low oxidation state that can be oxidized further to higher oxidation state, usually in combination with a salt.

15. The composition of claim 14 wherein said photoreducible dye is selected from the group consisting of quinones and anthraquinones

16. The composition of claim 1 wherein said layered silicate material is a Wyoming-type sodium montmorillonite or Wyoming-type sodium bentonite which has been treated with one or more alkoxylated ammonium cations.

17. The composition of claim 1 further comprising at least one antioxidant.

18. The composition of claim 1 further comprising at least one photoinitiator.

19. An article comprising at least a first and a second layer, said first layer comprising a polyamide having dispersed therein at least one layered silicate material and wherein said second layer comprises a polymer and an oxygen scavenging system.

20. The article of claim 19 wherein said layered silicate material comprises a Wyoming-type sodium montmorillonite or Wyoming-type sodium bentonite

Sub
Q 10 >

5
Sub
Q 11 >

10

15

Sub
B2 7

20

25

which has been treated with one or more alkoxyated ammonium cations; wherein said polymer comprises a polyester and said oxygen scavenging system comprises at least one polyether compound and at least one oxygen scavenging catalyst.

21. The article of claim 19 wherein said polymer comprises polyethylene methyl acrylate and said oxygen scavenging system comprises a transition metal catalyst and a cyclohexene moiety copolymerized onto said polymer.

5 22. The article of claim 19 wherein said article is a container or a preform comprising at least three layers in at least a portion of said article.

23. The article of claim 19 wherein said oxygen scavenging composition is blended with recycled polyester.

10 24. A multilayer article wherein at least one layer comprises the composition of claim 1.

25. The article of claim 24 wherein said at least one layer is disposed between a first and third layer each of which comprises at least one polyester.

26. The article of claim 24 wherein said article is selected from the group consisting of film, sheet, tubing, profiles, pipes, fiber, containers, preforms, thermoformed articles and flexible bags.

15 27. The article of claim 24 wherein said article is a container or a preform comprising at least three layers in at least a portion of said article.

28. The article of claim 24 wherein said article is a container or a preform comprising at least four layers in at least a portion of said article.

20 29. The article of claim 24 wherein said polymer-platelet particle composite is disposed in an intermediate layer between a first and fourth layer each of which comprises at least one polyester.

Add 7
B3